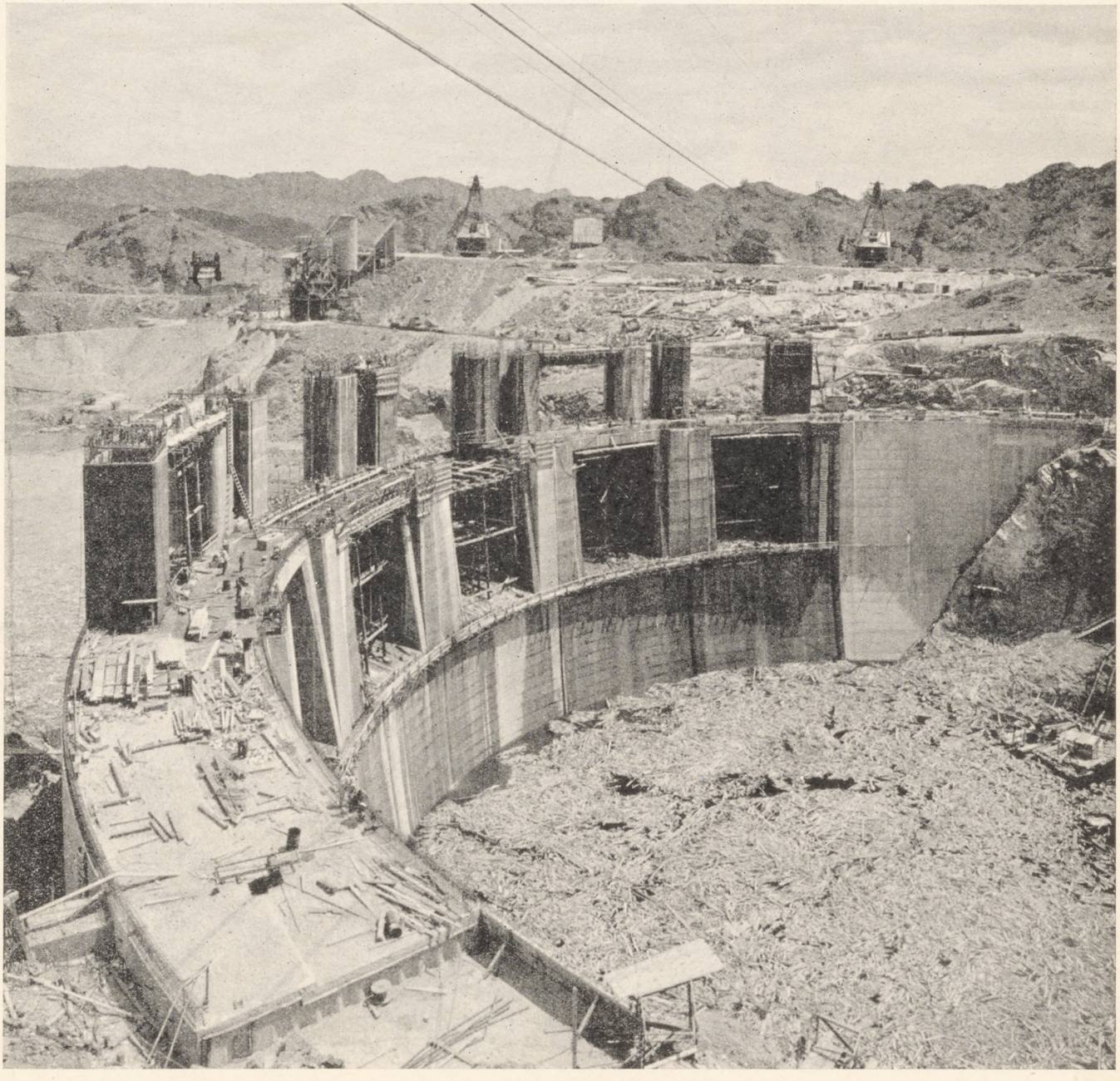
• COLORADO RIVER •

AQUEDUCT NEWS

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Vol. V MAY 25, 1938 No. 10



This recent picture of Parker Dam, now approximately 90 per cent completed, was taken by the official photographer of the U. S. B. R.

• COLORADO RIVER •
AQUEDUCT NEWS
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA
306 WEST THIRD ST.
LOS ANGELES, CALIFORNIA

Published twice monthly in the interest of Field and Office Workers on the Colorado River Aqueduct, and for the information of all other citizens of the Metropolitan Water District.

Vol. V May 25, 1938 No. 10

Monrovia Tunnel No. 3 Lining Completed

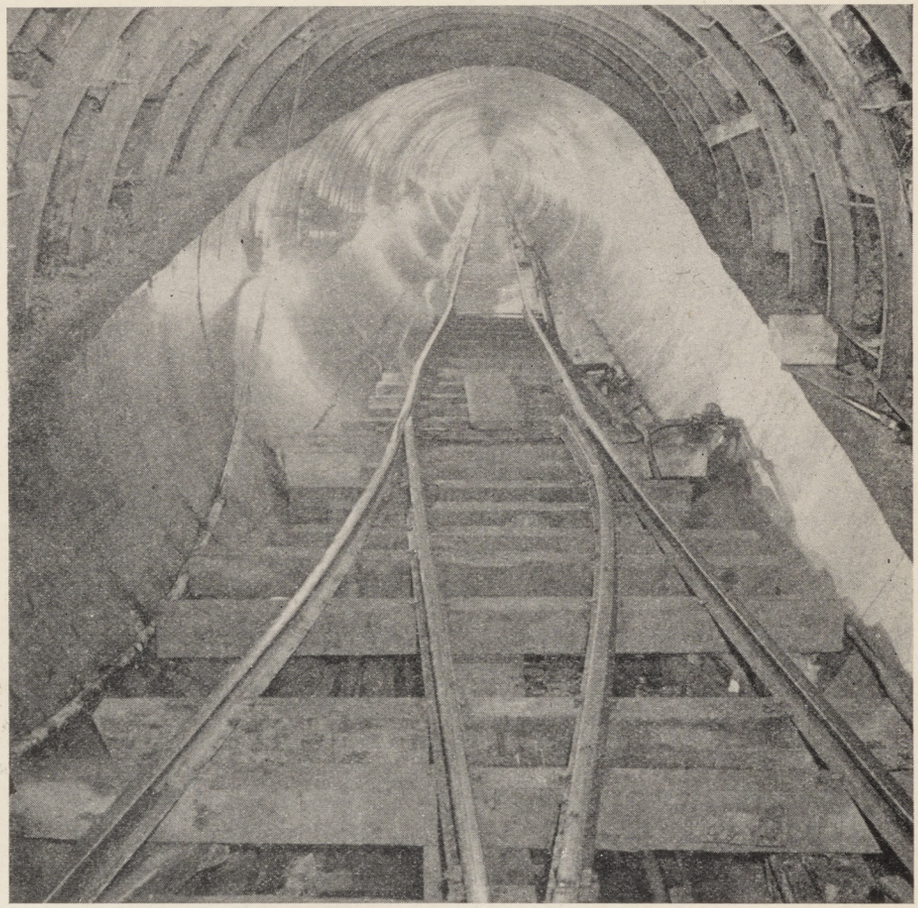
January 21, 1935, is an important date in the construction history of the Metropolitan Water District because on that day the first work was started on the 150-mile distributing system of the Colorado River Aqueduct. "Holing in" on the east bank of Monrovia Canyon, hardrock crews on that date started the driving of Monrovia tunnel No. 3, the longest tunnel on the Distribution Division. On May 17, 1938, the last concrete lining was placed in this 32,105-foot tunnel.

Running east to west, from San Gabriel Canyon to Monrovia Canyon, Monrovia No. 3 forms an important link in the upper feeder of the distributing system. Constructed under the same contract as were Monrovia tunnels Nos. 1 and 2, Monrovia No. 3 will be connected with the other two tunnels by a monolithic concrete siphon now being built by Basich Brothers across San Gabriel Canyon.

Under the direction of H. E. Carleton, general superintendent for the West Construction Co., Monrovia No. 3 was driven from its west portal in Monrovia Canyon and from a 1,746-foot adit in Fish Canyon. Before excavation of the adit could be started it was first necessary to cut a construction road, approximately one mile long, out of the steep banks of Fish Canyon. Excavation of the adit was started July 20, 1935, and by September 27, crews were working east and west from the end of this adit in the main tunnel.

The tunnel was holed out in San Gabriel Canyon, east of the adit, on October 5, 1936, and was holed through between the adit and the west portal on February 25, 1937. Due to the length of the haul from the west portal (the point of holing through was 14,852 feet east of the portal) muck trains of

(*Continued on Page* 8)



Last March when floods washed out the batching plant of the West Construction Co., concrete lining operations in Monrovia tunnel No. 3 were temporarily suspended at this point. This picture of the resulting unusual joint gives an excellent sectional view of the lining. All other construction joints in the lining are vertical.

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SUPERINTENDENTS OF CONSTRUCTION PUMPING PLANTS

Intake and Gene.....T. T. Walsh
Iron Mt.....B. H. Martin
Eagle Mt. and Hayfield.....R. C. Booth

SUPERINTENDENTS

(Main Aqueduct Tunnels)

San Jacinto Tunnel, District Force Acct., B. C. Leadbetter, Gen. Supt.; S. J. Shrode, John Austin and C. E. Sides, Tunnel Supts.; Chas. F. Thomas, Jr., Edwin Noon, Supts.; F. A. Backman, Gen. Foreman.

(Distribution Tunnels)

Monrovia Tunnels Nos. 1, 2 and 3, West Construction Co., H. E. Carleton, Gen. Supt.; E. M. Penn, Concrete Supt.

Monrovia Tunnel No. 4, L. E. Dixon Co., Bent Bros., Inc., and Johnson, Inc., W. N. Evans, Supt.

(Canal, Siphon, Conduit)

Schedules Nos. 14, 15 and 16, Thompson - Starrett Co., Inc., Rodney Smith, Gen. Supt.; V. H. Wiese, Engineer.

Schedules Nos. 18, 19 and 20, J. F. Shea Co., Inc.. Gilbert J. Shea, Gen. Mgr.

(Distribution Pipe Line)

Schedules 6P and 7P, J. F. Shea Co., Inc., Gilbert J. Shea, Gen. Mgr.

Schedules 9P, 10P, 11P, United Concrete Pipe Corp., John Huber, Plant Supt.; Roy Richards, Construction Supt.

Schedules 8C, 9C, 12C, Basich Bros.; Dick Noble, Supt.

Schedules 21SC, 22SC, 23SC, J. F. Shea Co., Gilbert J. Shea, Gen Mgr.; Ed. H. Shea, H. F. Rennebohm, Supts.

Distribution Headworks, The Contracting Engineers Co.; Julian Huddelston, Supt.

(Dams)

Cajalco dam, The Griffith Co., Franz Fohl, Gen. Supt.

Parker Dam, J. F. Shea Co., Frank Crowe, Gen. Supt., H. P. Bunger, Constr. Eng., U.S.B.R.

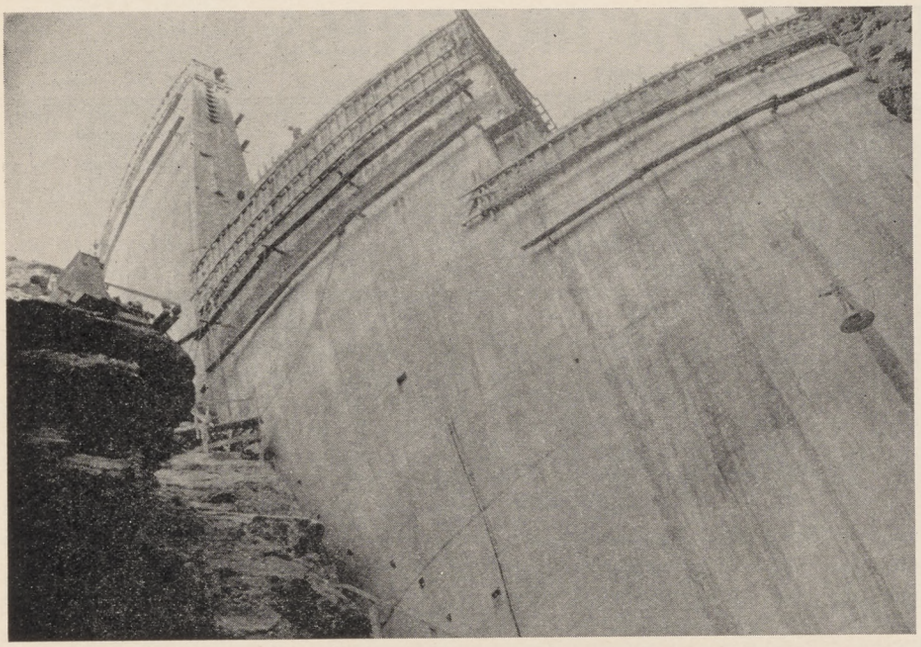
Gene Wash dam, Copper Basin dam, J. F. Shea Co., Frank Crowe, Gen. Supt.

(Pumping Plants)

Intake and Gene, Winston Bros. and Crowell, R. A. Crowell, Supt.; F. T. Hillman, Engr.

Eagle Mountain, L. E. Dixon Co., J. H. Larkin, Supt.

Hayfield, Dixon and Case, Crawford Strohacker, Supt.



Rising into the air like a section of the New York skyline, Copper Basin dam has a maximum height of 210 feet. Placing of concrete in the structure was completed on May 14.

Complete Placing Of Mass Concrete Copper Basin Dam

With the completion of mass concreting in the Copper Basin Dam during the week ending May 14, two additional main aqueduct features are now about ready for their part in the job of providing an adequate water supply for the cities in the Metropolitan Water District. These features are the Gene Wash and Copper Basin reservoirs.

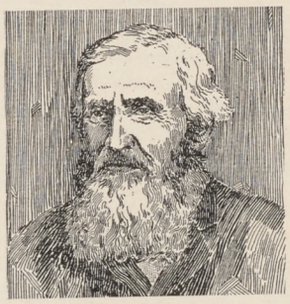
Constructed by the J. F. Shea Co., the Copper Basin and Gene Wash dams are being built under the same contract. In addition to the dams themselves, the work includes the building of a dike and spillway at the Gene reservoir, a spillway at the Copper Basin reservoir, and the outlet works at the east portal of the Whipple Mt. tunnel. The contractor's bid for these items was $594,207.

The two dams are of similar construction, being the concrete arch type. The Gene dam, on which all work is now completed, has a maximum height at its crest of 138 feet, and is 430 feet long at the crest. Started on March 29, 1937, this structure contains 4,300 cubic yards of concrete and 313,500 pounds of reinforcing steel.

First work on the Copper Basin dam was started on May 15, 1937, just a year prior to the completion of concreting. This structure has a maximum height of 210 feet, is 253 feet long at the crest, and contains 17,870 cu. yds. of concrete and 340,000 lbs. of steel.

All work on this contract has been under the direction of Division Engineer W. E. Whittier. John Sawyer is superintendent for the contractor, and John Bartlett is senior inspector for the District on the work.



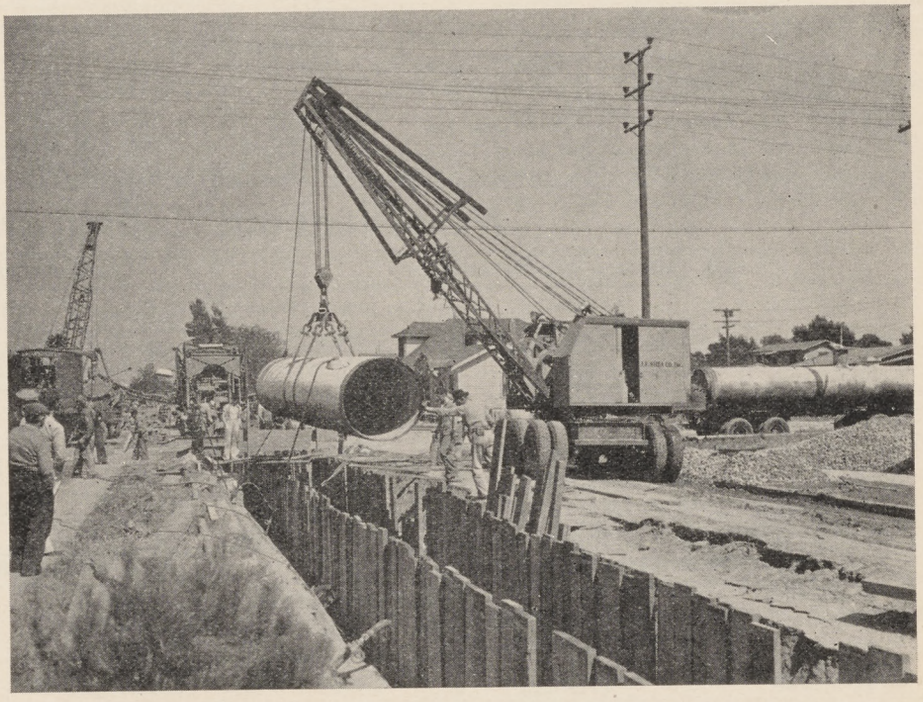


WILLIAM LEE MANLY

Discovered in 1540 by Hernando Alarcon, who had been sent out by Mendoza from Mexico to find and sack the mythical Seven Cities of Cibola, and given its present name 200 years later by a Spanish Padre, Father Francisco Garces, the Colorado River has stirred the imagination of men for 400 years.

Destined to become the richest possession of the Great Southwest, the Colorado had been navigated three hundred years before the first prospectors emerged from the hills with the yellow metal which wrote the name of CALIFORNIA across the sky in letters of gold. Throughout the three centuries

(*Continued on Page* 5)



Approximately 300 miles west of the Copper Basin Dam shown above, work is under way here on the construction of the Palos Verdes cross-feeder of the distribution system.

CONSTRUCTION PROGRESS

May 1 to 15, 1938

TUNNEL (MILES)	EXCAVATION Completed	EXCAVATION Remaining	LINING Completed	LINING Remaining
Aqueduct	90.21	1.90	85.55	6.56
Distribution	16.22	0.44	16.14	0.48
Total	106.43	2.34	101.69	7.04

CANAL, CONDUIT AND SIPHON (MILES)	Completed	Remaining
Excavation	145.60	0.01
Concrete	144.42	0.14
Back Fill	80.64	0.20

DISTRIBUTION PIPE LINE (MILES)	Completed	Remaining
Excavation	49.03	14.19
Back Fill	48.89	14.33
Concrete	48.04	15.18

TUNNELS

AQUEDUCT

CONTRACTOR	TUNNEL	LENGTH IN FEET	EXCAVATION IN FEET: NUMBER OF SHIFTS	AVERAGE PER SHIFT	THIS PERIOD	TOTAL TO DATE	REMAINING	LINING IN FEET: ARCH OR INVERT	NUMBER OF SHIFTS	AVERAGE PER SHIFT	THIS PERIOD	TOTAL TO DATE	REMAINING
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	SAN JACINTO										*(621)	(34,225)	(34,618)
	Cabazon Shaft to East Portal	8,880		Completed		8,880	0	Arch	0	0	0	8,484	396
								Invert	0	0	0	8,484	396
	Cabazon to Lawrence	26,809	45	7.8	349	22,643	2,771	Arch	0	0	0	6,973	19,836
	Lawrence to Cabazon		45	6.3	283	1,395		Invert	0	0	0	6,972	19,837
	Lawrence to Potrero	17,672	45	3.2	142	652	7,269						
	Potrero to Lawrence		45	3.3	147	9,751		Arch	12	38.6	463	3,124	14,548
								Invert	11	113.8	1252	6,051	11,621
	Potrero Shaft to West Portal	15,482		Completed		15,482	0	Arch	0	0	0	14,953	529
								Invert	0	0	0	15,482	0
	TOTALS Ft.	68,843	180	5.1	921	58,803	10,040	Arch	12	38.6	463	33,534	35,309
	Miles	(13.04)			(0.18)	(11.14)	(1.90)	Invert	11	113.8	1,252	36,989	31,854

DISTRIBUTION

*Invert considered to equal 0.2 and arch 0.8 of completed section.

WEST CONSTRUCTION CO.	MONROVIA NO. 3	32,105		Completed		32,105	0	Full Section	33	31.5	*(832) 1,040	(32,029) 19,270	(66) 82
J. F. SHEA CO., INC.	Rockdale	262	10	9.8	98	179	83				0	0	262
	Oakhill	597			0	0	597				0	0	597
	Ascot	1,622			0	0	1,622				0	0	1,622
	TOTALS Ft.	34,586	10	9.8	98	32,284	2,302		33	25.2	*832	32,029	2,547
	Miles.	(6.55)			(0.02)	(6.11)	(0.44)				(0.16)	(6.07)	(0.48)

Canal, Conduit, Siphon and Pipe Lines

AQUEDUCT

SCHED. NO.	CONTRACTOR	FEATURES	Length In Feet	EXCAVATION—Feet: Period	To Date	Remain'g	CONCRETE—Feet: Period	To Date	Remain'g	BACKFILL—Feet: Period	To Date	Remain'g
16	THOMPSON-STARRETT CO.	Conduit and Siphons	19,346	0	19,346	0	0	19,346	0	0	19,346	0
19	J. F. SHEA CO., INC.	Conduit and Siphons	37,105	0	37,105	0	33	37,105	0	0	36,778	327
20 A & B	M. W. D.—FORCE ACCT.	Siphon	752	0	705	47	0	0	752	0	0	752
	TOTALS		57,203	0	57,156	47	33	56,451	752	0	56,124	1,079

DISTRIBUTION PIPE LINES

9-P	UNITED CONC. PIPE CORP.	Precast Concrete Pipe	8,697	0	8,388	309	0	8,388	309	0	8,388	309
8C-9C-12C	BASICH BROTHERS	Cast-in-Place Conc. Pipe	1,656	276	1,140	516	0	673	983	0	480	1,176
21SC	J. F. SHEA CO., Inc	Welded Steel Pipe	26,449	2,039	2,039	24,410	1,824	1,824	26,425	0	0	26,449
22SC			28,310	0	0	28,310	0	0	28,310	0	0	28,310
23SC			34,470	3,041	13,068	21,402	3,219	13,057	21,413	1,942	10,573	23,897
	TOTALS		99,582	5,356	24,635	74,947	5,043	23,942	75,640	1,942	19,441	80,141

Miscellaneous Construction

PARKER RESERVOIR—SIX COMPANIES, INC.

FEATURES	Est. Quan.	Period	To Date	Percent
Diversion Tunnels—Excav.	3,463 Ft.	0	3,463	100
Diversion Tunnels—Concrete	3,363 Ft.	0	3,363	100
Cofferdams—Excav.	227,582 C.Y.	0	227,582	100
Cofferdams—Fill	464,890 C.Y.	0	464,890	100
Outlet Works—Excav.	220,000 C.Y.	0	207,301	94
Outlet Works—Concrete	5,000 C.Y.	56	5,200	99
Dam—Excavation	1,508,200 C.Y.	0	1,524,436	100
Dam—Concrete	297,900 C.Y.	1,040	289,436	97
Power House—Excav.	58,000 C.Y.	0	56,782	100
Power House—Concrete	14,000 C.Y.	0	15,414	100

GENE WASH RESERVOIR—J. F. SHEA CO., INC.

FEATURES	Est. Quan.	Period	To Date	Percent
Dam—Excavation	7,500 C.Y.	0	7,500	100
Dam—Concrete	14,339 C.Y.	66	14,333	100
Spillway—Excavation	4,762 C.Y.	0	4,762	100
Spillway—Concrete	4,729 C.Y.	0	4,729	100
Dike—Excavation	1,700 C.Y.	0	1,700	100
Dike—Fill	8,700 C.Y.	0	8,700	100
Dike—Concrete	954 C.Y.	504	954	100

AQUEDUCT PUMPING PLANTS AND APPURTENANT WORKS

PLANT	CONTRACTOR	PER CENT COMPLETED: Excavation	Concrete	Steel Erect'n
INTAKE	WINSTON BROS. CO. & WILLIAM C. CROWELL	100	100	100
GENE		100	100	100
IRON MT.	WOOD & BEVANDA	100	100	100
EAGLE MT.	L. E. DIXON CO.	100	100	100
HAYFIELD	L. E. DIXON & CASE CONST. CO.	100	94	92

COPPER BASIN RESERVOIR—J. F. SHEA CO., INC.

FEATURES	Est. Quan.	Period	To Date	Percent
Dam—Excavation	8,700 C.Y.	0	8,700	100
Dam—Concrete	18,000 C.Y.	7	17,890	99
Spillway—Excavation	8,000 C.Y.	0	8,000	100
Spillway—Concrete	2,045 C.Y.	356	2,371	100
Outlet Works—Excavation	Lump Sum	4%	50%	50
Gate House Superstructure				
Clearing Reservoir Site	427 Ac.	5	393	92

PATHFINDERS

(*Continued from Page* 3.)

preceding the magic year of 1849, the romance of discovery, conquest and adventure moved upon the waters of this untamed river.

Then came the gold rush to California, and to the long trains of covered wagons, the "Red" river appeared only as an obstacle blocking their path and necessitating long, perilous detours. In this host of pioneers there was one, however, who refused to recognize the Colorado as a barrier. This man was William Manly, whose daring exploits place him in the front rank of that colorful company of gold rush days.

Manly was attached as a driver to one of the overland wagon trains. When his party reached northern Utah and came to the Green River, a tributary of the Colorado, someone volunteered the information that the stream flowed directly to the Pacific. Young Manly promptly determined to ride the racing currents to the California gold fields. Finding an abandoned ferryboat sunk in the sands along the banks of the river, he induced six of his bull-whacking companions to join him on the voyage.

In this clumsy leaking ferryboat, Manly set forth to navigate the treacherous rock-studded rapids of the Green and Colorado. His ferryboat was smashed to bits in one of the first canyons encountered. Manly and his followers promptly hollowed out three logs for boats, and sped merrily on. The solemn warnings of friendly Indians, however, finally caused this river-riding band of ox-skinners to quit the stream above the Grand Canyon and strike westward by an overland trail.

Manly later added to his fame by leading another party of '49ers out of the jaws of Death Valley. But for hair-raising adventure, this mad dash through the upper series of Colorado river canyons by a party of bull-whacking frontiersmen, short on the lore of river navigation, but long on nerve, has rarely been surpassed.

Today, 400 years after Alarcon found the Colorado River, the dreams of soldiers, priests, explorers, and home-builders, are emerging into reality. During the present decade the Colorado has been harnessed. Boulder Dam has been completed. The All-American Canal is ready for use. The Colorado River Aqueduct is more than 80 per cent finished. One chapter of History is nearly written.

Before opening the new chapter, it is fitting to go back over the record of those men, now dead, whose daring and vision made possible the completion of that first era.

MONTHLY REPORT REVIEWS ACTIVITIES ALONG THE AQUEDUCT LINE

(EDITOR'S NOTE: The following is a brief summary of some of the activities of the District as set forth in the monthly report of General Manager F. E. Weymouth, filed with the Board of Directors in May, covering the work done in April.)

Legal Division

All necessary documents were prepared to secure the payment for Interim Certificate No. 81 in the denomination of $1,800,000, and Interim Certificate No. 82 in the denomination of $2,132,000, representing bonds heretofore sold to the R.F.C.

Miscellaneous Activities Division

During the month 254 employment applicants were cleared through the labor employment office, and of this number 87 were made available for force account work and 167 were made available for aqueduct contractors.

Field Engineering and Construction

Safety Engineering—During the first month of the Special Safety Campaign, April, 1938, the San Jacinto Tunnel lost-time accident frequency rate was reduced 23 per cent from the March frequency rate. See Safety Awards, page 8.

Operation of Utilities—During the period March 16 to April 15, 5,491,841 kw.hr. of power was used, 12,251 long distance telephone calls were handled, and 1,397,300 cubic feet of water was delivered. Reconstruction of the power system between Lakeview and Cabazon was completed April 7, and lines were placed in operation. Construction of the realignment of the telephone trunk line near Palm Springs station was started.

Aqueduct Construction — Work on Parker Dam and appurtenant structures progressed continuously during the month, the contract as a whole being 87 per cent completed at the end of the period. Main heading excavation in the San Jacinto tunnel was advanced 0.39 miles during the month, making a total of 10.97 miles excavated and leaving 2.07 miles yet to be penetrated.

Civil Engineering Division

Specifications—During April specifications were issued for the purchase of 80,000 barrels of cement and for the manufacture and installation of steel windows and doors at Cajalco outlet tower. Bids were opened under Specifications No. 276 for furnishing regulating valve assemblies for the distribution system headworks at the end of the Cajalco outlet tunnel.

Design—Drawings were prepared for the motor-driven oil pressure system for the operation of the outlet valves for Gene Wash and Copper Basin dams. A study was made of the flooding of roads and Indian reservation lands along the Colorado River that will be occasioned by construction of the Colorado Indian Reservation diversion dam at Headgate Rock.

Materials—Shipments of low heat cement for Gene Wash and Copper Basin dams were completed. Total shipments of cement during the month amounted to 34,000 barrels. Reinforcement steel, totaling 203 tons, was ordered.

Distribution Division

Office Engineering—Revised drawings were made for the Los Angeles River crossing and of the Arroyo Seco blow-off structure of the Palos Verdes feeder line.

Field Construction—The suspension bridge at the Cajalco outlet tower was completed on April 4. Work was started on the reservoir fence on April 15, and clearing of the forebay site for the distribution system headworks was started on April 26.

Electrical Engineering

Main Pumping Plants — Contract work was completed during April on the Intake, Gene Wash, and Eagle Mountain pumping plants. This completes all plant construction contracts with the exception of Hayfield. As of April 25, the contractor on that plant had completed 92 per cent of the work.

Personnel Division

During the month 502 changes of status, 170 terminations, and 96 employment contracts were recorded. The net turnover for all positions for March was 4.81 per cent.

Purchasing Division

A total of 1,501 purchase orders was issued during April covering purchases amounting to approximately $153,500. Carload forwardings for the month amounted to 189.

Accounting and Costkeeping

The total cost of the work accomplished to April 30, 1938, was $163,621,209.

Financing

The Problem of Securing Funds for the Construction of the Colorado River Aqueduct

By James H. Howard
General Counsel, M.W.D.

On the 29th day of September, 1931, the Voters of the Metropolitan Water District of Southern California, by a majority of substantially five to one, authorized the issuance of bonds in the amount of $220,000,000, for the purpose of financing the construction of the Colorado River Aqueduct. The law requires merely a majority vote. The election was held two years after the financial crash of 1929 and during the period of economic depression which, in spite of attempted remedial measures, still continues. While the extent and duration of the depression may not have been realized in the fall of 1931, its effects had been definitely felt. Nevertheless the people of Southern California had sufficient confidence in the future of their country to support, by an overwhelming majority, the large bond issue required for aqueduct construction. In this connection it should be remembered too that at the date of election the idea of Federal financing through the Reconstruction Finance Corporation or Public Works Administration had not yet developed. The bonds were not voted as a means of securing and expending Federal moneys.

The Metropolitan Water District Act required that before being issued, the bonds be subjected to the scrutiny of the courts. A proceeding was brought in the Superior Court of Los Angeles County, in which, by published notice, all interested parties were invited to participate and raise any and all objections to the validity of the issue. In a contested case the matter was carried to the Supreme Court of the State and, in June, 1932, resulted in an opinion sustaining in all particulars the validity of the issue.

In the meantime it developed that the market for municipal bonds had fallen off to a point where District bonds could not be sold at any interest rate which the Board of Directors of the District was willing to pay.

In January of 1932 the R. F. C. had been created by the Congress, for the purpose of financing banks, insurance companies, and railroads. During the spring and early summer, the General Manager and Chief Engineer of the District and the General Counsel devoted themselves to the then pending "Emergency Relief and Construction Act of 1932," designed to authorize R. F. C. loans to aid in financing self-liquidating public works projects. The thought was a new one and the natural inertia of the Congress had to be overcome. Even after the basic idea had been accepted, the tendency was to hedge such lending power with restrictions inconsistent with the District's borrowing power. To enable the District to go ahead upon its long-term financing program, it was necessary that such proposals be defeated. Senator Wagner of New York was in charge of the bill. It was due to the efforts of Senator Hiram Johnson of California that the text of the amendment was so written that, upon the adoption of the act, the R. F. C. was authorized to buy the long-term bonds issued by public corporations engaged in self-liquidating public works projects. The act became effective in July of 1932.

The District immediately applied for a commitment from the R. F. C. for the purpose of initiating aqueduct construction. Here again, the novelty of the Federal lending program made for difficulty. An Advisory Board of Engineers was appointed by the R. F. C. for the purpose of studying the engineering and economic set-up and to make a determination as to whether the District's project satisfied the definition of self-liquidating public works, as described in the act. The attorneys of the corporation went very thoroughly into the corporate structure and legality of the District's organization and its bond issue. After weeks of work a favorable report of both engineering and legal phases of the project was secured, and on the 13th day of September, 1932, the R. F. C. made a commitment of $40,000,000 for the purpose of initiating aqueduct construction.

An attempt was made to enjoin the loan by action in the District Court of the District of Columbia, on the ground that the project did not come within the statutory definition. The action was decided against the objectors, however, and the initial loan was made.

The path was not yet clear. With the incoming Democratic administration in the spring of 1933, the Public Works Administration was set up, and the authority of the R. F. C. to make loans to self-liquidating public works projects was terminated. It was the desire of the P. W. A. to procure immediate expenditure of large sums of money. The District's application then pending before the R. F. C. was automatically transferred to the P. W. A., but the latter organization was unwilling to make commitments for a construction program extending over a period of years.

Although every effort was made to secure favorable action, no funds were derived from the Public Works Administration other than those taken under a loan-grant agreement in the amount of $2,000,000, limited in its application to the construction of cofferdams and diversion tunnels at Parker Dam.

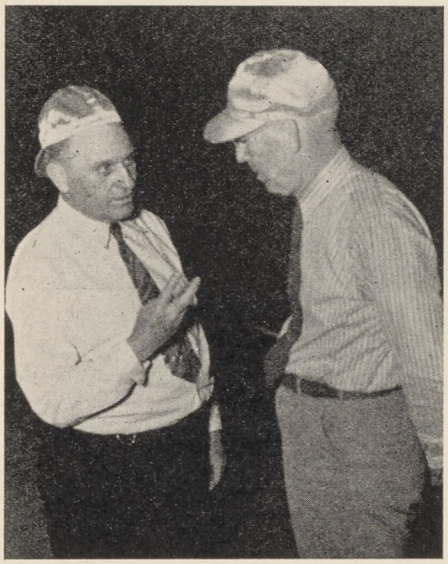
Realizing that the general market was not yet in a position to absorb District bonds at a favorable interest rate, representatives of the District again became active in congressional circles. In 1934 an amendment to the R. F. C. law was pending, relating to loans to industry. To this bill an amendment was attached, reauthorizing the R. F. C. to make loans for the purpose of financing projects which had been initiated by such loans prior to June, 1933.

After weeks of effort, during which the legislation hung in the balance more than once, the law became effective. Thereupon negotiations with the R. F. C. were resumed and, with the exception of the $2,000,000 loan-grant agreement made with the P. W. A. in 1933, all of the bonds of the District have been sold to the R. F. C. Of the bonds so sold, $147,000,000 have been delivered and the money received. The R. F. C. has committed itself to take an additional $60,000,000.

As the result of an amendment to the Metropolitan Water District Act made in 1933, it is possible for the District to issue refunding bonds. The fact that the loans have been centered in the hands of the R. F. C. will, it is expected, enable the District to issue permanent bonds under conditions much more favorable than would have been the case had the District been forced into the general market at any earlier time.

The fact that the District's project had been carefully planned and was ready for financing in the summer of 1932, all of the engineering and legal work having been completed, enabled the District to proceed with its financing program under extremely favorable conditions. Construction costs were much lower by reason of the fact that the program was commenced in 1932. Had the District been compelled to accept whatever interest rate the general market of the time might have offered, or had it been compelled to defer its operations until the market had become stabilized, the costs of the aqueduct would have been far greater. The combination of circumstances and the cooperation of the R. F. C. have worked greatly to the advantage of the taxpaying public of the District and the prospective users of Colorado River water.

NEWS FROM FIELD AND OFFICE



At first glance, it looks like the "ump" was laying down the law. However, research indicates that this is actually the battery for the first part of the first game in the Hardrock Nite Ball season. Left, catcher, "Gabby Harkness" Leadbetter; right, pitcher, "Schoolboy Rowe" Burkholder.

(Ed. note. The following is a word-for-word account of the first game of the Hardrock Nite Ball season, played May 10, as it came in over the radio.)

"Here we are ladies and Gentlemen at the opening game of the Hardrock Nite Ball season to be started off tonight by the Banning Hotchas and the East Portaleers. This is your M.W.D. sports announcer Charles Thomas, Jr., speaking from the playing field and all set to give you a play-by-play account of this thriller. Ah, this is an occasion! The bleachers are filled with a brilliant and colorful crowd of men, women and children, who are whooping it up for their favorite teams. We are just about to start now, and to pitch and catch the first ball will be Assistant General Manager J. L. Burkholder and General Superintendent B. C. Leadbetter. They have been warming up for about an hour back of the cage and are now ready to put that first ball on its way. There is a moment of suspense as the pitcher winds up—he's winding—winding — winding—and there it goes. There's a gasp from the crowd—oops, it's a trifle out of reach—nosir it isn't either—the catcher has it. Well, well, he did catch it. Well, now, we're ready to start the game itself. The first batter goes to the plate. Umm, looks like we jumped the gun. The Burkholder-Leadbetter combination are going to have at it again.

Aqueduct Temperatures

May 1 to 15, 1938

	Max.	Min.
Div. 1	108°	48°
Div. 2	107°	53°
Div. 3	105°	53°
Div. 5	93°	34°

Well—the boys worked hard for this chance and who's to deny them one more ball. There it goes—yep, he caught that one too. Well, now we're ready to—Umm. There's going to be a third ball. Well NOW we're. Umm."

At this point the announcer began the description of the beautiful scenery, the moon, the stars, Mt. San Gorgonio, Mt. San Jacinto, etc., etc., his remarks being punctuated by the regular whish and plop of the ball as the Burkholder-Leadbetter combine settled down to serious business. Running out of scenery, the announcer then gave an excellent word picture of the would-be batter sleeping peacefully on the ground, and of a bang-up pinochle game that was going on in the left field bleachers.

The game finally did get started, although there was some mumbling as the original battery reluctlantly gave up their places. Due to the fact, however, that Announcer Thomas was also the manager of the East Portal team, and due to the fact that the final score was 20 to 14, in favor of the Banning Headquarters Hotchas, the radio reception sort of broke down as the game went on.

A "lively" ball was also used in the second game of the series, played May 12 by Potrero and Lawrence. The score, Potrero 34 (nope, that isn't a typographical error), Lawrence 7.

* * * *

Speaking of Airmail Week, Philip S. Caliveer, underground electrician at Lawrence adit, has a post card carried by airplane, and officially stamped by the Post Office, that predates regular airmail by a number of years. The card is postmarked "Aeroplane Station, San Diego, Calif., April 6, 1912." The card was carried during an aviation meet put on in 1912 by Glen Curtiss and Bill Pickens in Coronado, Calif., and the carrying of the mail was specially authorized by the Post Office Dept.

* * * *

In referring to the District's exhibit at Bullock's, the last issue of the NEWS (May 10, 1938) failed to give credit to the lady whose excellently colored pictures of the aqueduct have attracted much favorable comment. This lady aqueducker is Mrs. Lorna Lampkin of the Design Division.. Mrs. Lampkin is employed as a draftsman in the Design Division, and has been with the District since August, 1933.

* * *

Members of the District's Board of Directors, accompanied by Assistant General Manager J. L. Burkholder, Assistant Chief Engineer Julian Hinds, and Distribution Engineer R. B. Diemer, made a three-day inspection tour of the aqueduct over the week-end of May 7.



The "winnahs" of the first game, the Banning Headquarters Hotchas. Back, left to right: Fat Cook, Rudy Kruggle, George Fox, Dutch Holland, Bill Hawkins, Jimmy Farrell, Henry Bruce, Jim Henry. Front, left to right: Don Sloss, Jerry Rehor, Bill Arnold, Gene Smith (Capt.), Jimmy Brown, Harry Swango, J. A. McKinzie.

District Bonds Refunded

Chairman John R. Richards, Victor H. Rossetti, and D. W. Pontius, of the Finance Committee of the Board of Directors of the Metropolitan Water District of Southern California, acting on authority of the Board, issued the following statement on May 20:

An agreement with the Reconstruction Finance Corporation whereby the Metropolitan Water District will issue refunding bonds bearing an average interest rate of 4 1-8 per cent in exchange for $200,000,000 in Colorado River Aqueduct bonds already sold to the R.F.C., and bearing an interest rate of 5 per cent, was approved today by the Board of Directors of the District.

The District's refunding agreement with the R.F.C. is based upon present and favorable bond market conditions. It will result, during the next several years, in an annual saving of $1,750,000 to the taxpayers and water users of the District. Over the life of the bonds this new agreement will result in a total saving of approximately $62,500,000 to the people of the District.

The lower interest rate secured by this exchange agreement with the R.F.C. is in keeping with the present interest rate market on long term maturity bonds such as the District's. Dates of maturity on District bonds range from 15 years from date of sale to 50 years. Interest payments are the only capital charge which the District is required to meet on its bonds for the first 15 years after date of sale.

A bond issue of $220,000,000 was authorized by the voters of the District in September, 1931, it being provided that all such bonds must be sold by public offerings at par, bearing not more than 6 per cent interest. Such offerings have been made by the District from time to time since November, 1932, as funds were required to finance construction of the Colorado River Aqueduct. The only bids received have been from the R.F.C. These bids have all been for par, with an interest rate of 5 per cent, a rate which in 1932 was considered favorable to the District. Furthermore, the District has realized a considerable saving in interest charges through an arrangement with the R.F.C. whereby bonds are delivered only as money is needed, in blocks as low as $500,000, thus eliminating interest payments on idle money.

Under the agreement, approved today (May 20), one half of the bonds will bear 4 per cent and the other half 4 1-4 per cent interest, thus making an average interest rate of 4 1-8 per cent.

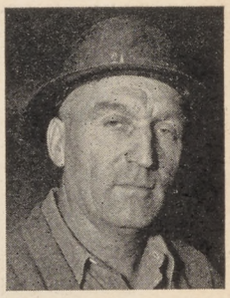
Who's Who On the Aqueduct



Spencer J. Shrode



Mel Bonelli



Edwin Noon

SPENCER J. SHRODE

Supt. of Construction, Potrero Shaft, San Jacinto Tunnel

Born Rockfort, Indiana, June 29, 1906 . . . Attended high school in Orland, Calif. . . Employed as a miner by the Eagle Mining Co. in Northern California, 1926-1927. . . Was in the United States Marine Corps, 1927-1928. . . Miner on tunnel project for the Connaly Construction, 1928-1929. . . Was employed by the J. F. Shea Co., as a miner and later as a shift boss on a tunnel project in Oregon, 1929-1931. . . Building construction in Los Angeles, 1931-1933. . . Started with M.W.D. in 1933 as miner-machineman on Coachella tunnels . . . Married and has two children . . . Known to everyone as "Jack".

MEL GEORGE BONELLI

Senior Inspector, East Portal Concrete Operations, San Jacinto Tunnel

Born August 24, 1902, Norfolk, Va. . . . Graduated in Civil Engineering from Tri-State College of Engineering, Angola, Indiana, 1925 . . . Has been on Colorado River Aqueduct project since March 29, 1926 . . . Originally employed as draftsman at Beaumont on preliminary surveys by City of Los Angeles . . . Was District's first inspector on San Jacinto tunnel . . . Married and has one daughter . . . Goes by his first name "Mel".

EDWIN NOON

Concrete Supt., Potrero Shaft, San Jacinto Tunnel

Born Iron Mountain, Michigan, January 11, 1892 . . . 1919-1929, shift boss and mine foreman for Buckley Mining Co., and Grant Mining Co., in Indiana . . . 1929-1933, general foreman on heavy construction in vicinity of Los Angeles, including excavation, caisson work, and concrete construction of schools, firehouses, and large public buildings . . . Was employed by M.W.D. as miner-machineman on Coachella tunnels in April, 1933 . . . Is married and has a son . . . Known on the job as "Ed".

MONROVIA TUNNEL NO. 3 LINING COMPLETED

(*Continued from Page* 2)

10 and 12 cars were used, requiring two locomotives to haul these unusually long tunnel trains. George Baker was the resident engineer for the District during the driving operations, and the first inspector on the job was Hugh Jones.

With a lined diameter of 10 feet, Monrovia 3, like the other upper feeder tunnels, is circular in section. Concreting operations were started at the Fish Canyon adit on December 21, 1936. East of the adit (11,284 feet) the full section of the tunnel was lined in a single operation. Most of the tunnel west of the adit was lined by placing invert first and then following with the arch section.

E. M. "Ernie" Penn is concrete superintendent for the contractor on this tunnel, having also supervised this work on Monrovia tunnels Nos. 1 and 2. Henry "Hank" Mills has been in charge of concreting operations for the District and Allan Campbell has been chief inspector on lining operations. All construction has been under the supervision of Distribution Engineer R. B. Diemer.

SAFETY FLAG AWARDS

The April safety flag for tunnel excavation operations went to Cabazon, and the award for the best safety record for concreting went to the East Portal crews.